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The Soviet Economy in 1988: Gorbachev Changes Course

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SUMMARY

In 1988, prompted by another year of slow economic growth, continuing disappointment in his efforts to modernize and reform the economy, and rising consumer dissatisfaction, General Secretary Mikhail Gorbachev reassessed and revised his economic policies. Gorbachev remains committed to his original vision of a revitalized economy. He has, however, apparently concluded that he cannot realize this vision as rapidly as he once thought possible, or proceed directly along the path he initially planned to follow. According to our estimates, the Soviet economy grew by only about 1.5 percent in 1988 — the second straight poor yearly showing. Meanwhile, Soviet media indicated that the campaigns to modernize industrial plant and equipment and reform the economic system, and even the once much-vaunted antialcohol campaign, were not only failing to meet the leadership's expectations but were occasioning major disruptions:

- Only 68 percent of the state's priority projects scheduled for commissioning last year were actually completed and the growing backlog of unfinished construction testified to widespread waste of investment resources.

- Although economic *perestroyka* has yet to include such radical moves as the elimination of price subsidies, the economic reforms that have been introduced reportedly have been confusing to planners and managers accustomed to Brezhnev-era ways of conducting their business.

- Reduced state revenues combined with increased state spending for investment, defense, and subsidizing unprofitable factories and farms substantially boosted the budget deficit and, in turn, inflationary pressures.

- Consumers grew more dissatisfied and more willing to voice their complaints — a development driven home to Gorbachev during a much-publicized trip to Siberia where he faced crowds of angry consumers.

Recognizing that a continuation of these problems would threaten both the USSR's economic well-being and his own political standing, Gorbachev launched a number of major policy changes designed to increase substantially the production of consumer goods and services, reduce the budget deficit, and postpone reforms that would require sacrifices on consumers' part. These shifts were reflected in:

- The approval of a 1989 plan that greatly increased the priority of consumption.

- A subsequent decision to cut state centralized investment by 7.5 billion rubles in 1989 from what was originally planned.

- The promise of a 14.2-percent cut in overall defense expenditures over the next 2 years.

- The leadership's move to put retail price reform on hold indefinitely.

The adoption of this package of measures does not signal the abandonment of modernization or economic reform. The cutbacks in investment are to come primarily from large, expensive projects such as land reclamation. At the same time, the leadership has reaffirmed its commitment to retooling Soviet plants with modern equipment. Similarly, Gorbachev is proceeding with reforms such as land leasing and the encouragement of private-sector initiatives. Still, he has clearly modified his program in an effort to increase popular support for *perestroyka* and reduce its disruptive impact.

In our view, the shifts that Gorbachev has implemented — if sustained — have the potential to boost consumer welfare and bring a sense of order to the economy. A successful diversion of resources from defense to consumption, in particular, could do much to increase worker incentives and ease inflationary pressures, thereby paving the way for the eventual implementation of key economic reforms. Effecting such a diversion, however, will be no easy task given the inefficiencies that plague the Soviet economy.

Gorbachev, moreover, is likely to face political as well as economic obstacles to proceeding with his program. He increasingly will be held personally responsible for any of its future failures. This situation obviously increases the pressure on Gorbachev to produce results. Moreover, his decision to alter the pace of economic restructuring has made him vulnerable to second guessing — opponents and bureaucrats could see Gorbachev's temporizing as a sign of weakness and become even more recalcitrant. Although the regime has portrayed the defeat of a sizable number of party officials — several at high levels — in the March 1989 elections as a warning to those who are resisting Gorbachev's reforms, the unexpected repudiation of so many party officials almost certainly has strengthened pressure on Gorbachev from more conservative leaders who view his political reforms as a threat to party authority. On the other hand, the election of a bloc of radical reformers beyond Gorbachev's control — such as former Moscow leader Boris Yel'tsin — gives those who have criticized the slow pace of economic reform a new forum in which to press their demands.

The Soviet Economy in 1988: Gorbachev Changes Course

This joint CIA-DIA report is the fourth in a series examining General Secretary Mikhail Gorbachev's efforts to revitalize the Soviet economy and the implications for defense. In particular, it assesses the major policy shifts Gorbachev initiated in 1988 to get his program on track. The first part of the paper details the economy's performance in 1988 and the status of the modernization and reform programs. The paper then discusses Gorbachev's backtracking on economic reform and his move to shift resources to consumer goods production. Finally, it considers whether these changes are likely to be successful.

1988 Economic Performance: Few Bright Spots

According to our estimates, after a spurt in 1986 the Soviet economy grew by about 1.5 percent in both 1987 and 1988 (see inset), a rate reminiscent of the pre-Gorbachev "stagnation years" (see figure 1).[1] Although the regime could take some comfort from the acceleration in the growth of labor productivity last year — as enterprises disgorged surplus labor and used the savings to raise wages and salaries — the performance of most sectors of the economy was extremely discouraging to Soviet leaders (see appendix A for a detailed discussion and appendix B for selected tables). A disappointing harvest did much to slow the economy's growth — farm production fell by an estimated 2 percent. Record highs in the production of meat, milk, and eggs were more than offset by a grain harvest that — according to Soviet statistics — was about 8 percent less than in 1987, a potato crop that was the worst since 1951, and stagnating vegetable and fruit production.

Not all of the blame for slow growth, however, can be attributed to agriculture. Our estimates

Intelligence Community Estimates vs. Official Soviet Claims

Although Soviet media commentary and leadership statements on last year's economic results have been highly negative, the officially reported growth of Soviet GNP — 5 percent — is substantially above the Intelligence Community's estimate, as well as high by historical Soviet standards. As in the past, Moscow's official statistics exaggerate actual growth both because of their failure to correct completely for inflation and their understatement of agriculture's influence on overall economic performance.[1] Soviet leaders have become increasingly critical of the official growth statistics, and our estimate of the growth of Soviet GNP last year — about 1.5 percent — is currently more in line with leadership statements of the economy's performance than the growth figures reported by the state statistical authorities.

[1] See Central Intelligence Agency, *Revisiting Soviet Economic Performance Under Glasnost: Implications for CIA Estimates*, SOV 88-10068, September 1988.

[1] Our estimates for 1988 are preliminary, and, as with previous estimates, will probably be revised slightly as more complete information on the past year's economic performance becomes available.

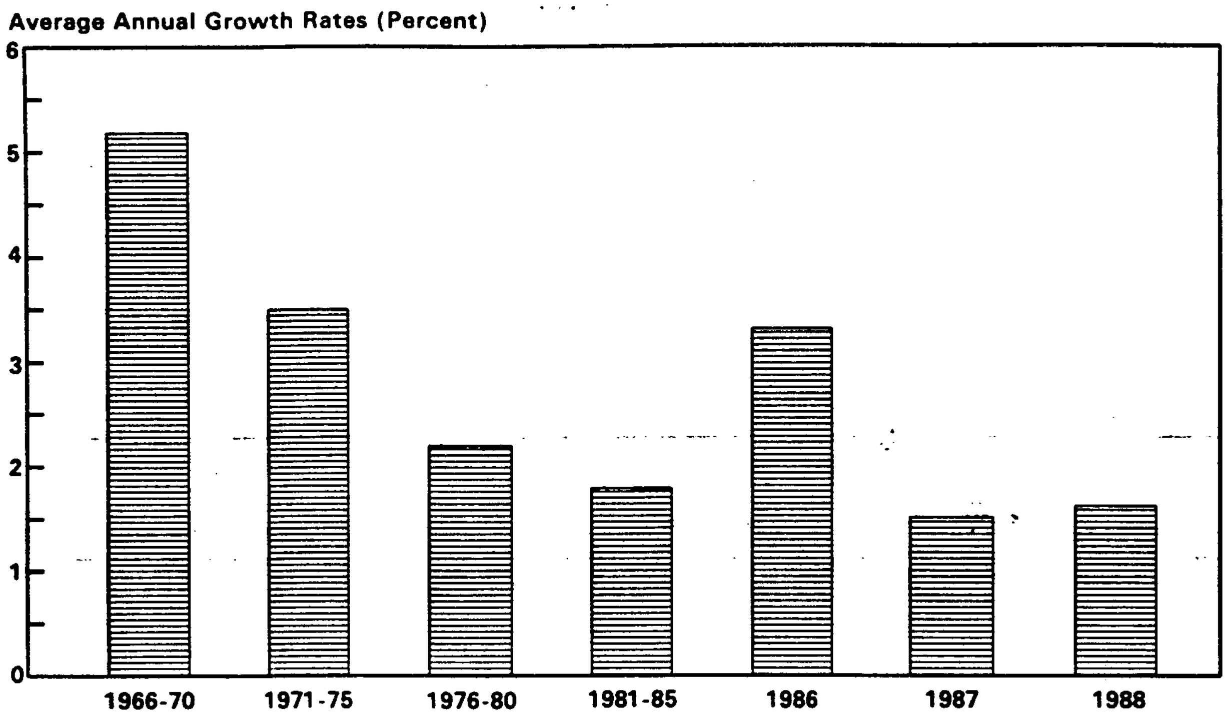


Figure 1. USSR: Growth of GNP, 1965-88.

indicate that industrial production increased by only 2 to 2.5 percent last year — not much better than the sluggish rates registered throughout most of this decade. This continued low growth might have been acceptable to the leadership if it had been caused mainly by enterprises halting production in order to retool — a development that might promise more and better output in the future. Unfortunately for the Soviets, such was not the case. Instead, supply disruptions, failure to bring new capacity on line, and confusion generated by reform measures such as wage reform and self-financing constrained output in most branches of industry. The crucial machinery sector continued to lag as even high-priority state orders for many types of machinery were not fulfilled. Although energy production grew by about 3 percent according to our estimates — a respectable rate in light of the continuing difficulties of oil and coal extraction — the much ballyhooed Soviet campaign to conserve energy showed few positive results.

The Soviet leadership has expressed increasing alarm over the lack of economic progress. Premier Nikolay Ryzhkov in a year-end review of the economy painted an especially gloomy picture. Although some of the economy's problems were due to circumstances beyond Moscow's control — the Armenian earthquake (see inset), for example — Gorbachev placed much of the blame on the failure of his own policies to take root. In a speech to scientists and cultural figures on 6 January 1989, he said that progress in the modernization program was being made only "very slowly" and that economic reform is "still encountering resistance." Yet the leadership currently seems most worried about the growing inflationary pressures caused by large state budget deficits and the consequent consumer discontent. In his 6 January speech, Gorbachev labeled this "the key question," while on 14 January 1989, Premier Ryzhkov said that the USSR's "most important task ... [is] to satisfy the Soviet people's steadily growing needs."

Economic Impact of the Armenian Earthquake

The Armenian earthquake of 7 December 1988 dealt a severe economic blow to a republic already hobbled by months of ethnic unrest and economic dislocation. Before the earthquake, Armenia's economy was suffering from work stoppages and disruptions resulting from ethnic clashes between Armenians and Azeris.

The earthquake killed an estimated 25,000 people and left 500,000 homeless, with damage to the region's industry, rail lines, road system, and power lines. Economic recovery will cost billions of rubles and take several years:

- Moscow plans to construct about 5 million square meters of housing over the next 2 years, at an estimated cost of over 3 billion rubles, or 5 percent of annual investment in national housing construction.
- The length of time needed to rebuild damaged factories suggests that Armenian industrial capacity will not be fully restored for at least 4 years.
- Armenian agriculture will falter until destroyed irrigation systems are rebuilt.

Although the damage to the small Armenian economy will have only a marginal effect on national economic performance, it will still strain Gorbachev's economic program:

- The costs associated with reconstruction will increase the Soviet budget deficit and probably exceed the 8-billion-ruble cost of the Chernobyl' cleanup.
- The diversion of food and consumer goods to the stricken region will threaten already limited supplies of some of these commodities in other republics.
- Moscow's intervention in the economy to relieve the effects of the earthquake will further retard an already delayed program to increase enterprise independence and move toward economic decentralization.

Slow Progress on *Perestroyka*

To judge from media commentary and leadership speeches, the Soviets were counting on continued positive results from their "human factor" campaign to achieve higher overall growth and effect some tangible improvements in living standards during 1988. They also expected their program to retool civilian industry to begin to bear fruit. Finally, they hoped that new economic reforms would get the economy on the path to economic vitality. In each of these areas, however, they were disappointed.

"Human Factor" Campaign. To give momentum to the economy, Gorbachev first relied on his "human factor" campaign, which included a series of measures to increase personal accountability, improve worker attitudes, and weed out incompetents. The most visible of these measures were his campaigns for discipline and against corruption and alcoholism. During his first year in office, for example, 25 economic ministers and state committee chairmen were replaced as Gorbachev made clear his intention to hold government and party officials more responsible for their performance. The Soviet press during 1985 and 1986 also indicated that as a result of the antialcohol campaign, there had been a marked decrease in absenteeism, fewer industrial accidents, and increased productivity overall.

Gorbachev continued to press parts of his "human factor" campaign in 1988. With the trial of former General Secretary Brezhnev's son-in-law Yuriy Churbanov last summer, Gorbachev again put officials on notice that corruption would no longer be tolerated. Similarly, the leadership continued to pay lip service to the issues of discipline and the need for greater efforts by workers. However, in at least one critical area — the antialcohol campaign — Gorbachev appears to have retreated in 1988. The apparent reason for this retreat was his recognition that the campaign had been less effective than originally claimed and had led to unforeseen problems. In contrast to earlier official claims that per capita alcohol consumption declined by 60 percent during the first 3 years of the campaign to reduce drunkenness, recent statements by Soviet officials indicate that the drop was less than half that amount as a result of a surge in illegal production. Home distilling of alcohol also contributed to widely publicized sugar shortages, and the loss of revenue from taxes on official alcohol sales added to the budget deficit, perhaps by as much as 10 billion rubles per year. For these reasons, Gorbachev has allowed state production of alcohol to increase over the past year.

Modernization Program. Soviet media reports also indicate that after 3 full years, Gorbachev's program to reequip Soviet industry with more modern machinery has failed to live up to expectations. On the positive side, the proportion of investment used to retool and reconstruct existing enterprises continued to increase in 1988. Also, newly introduced machinery models were said to constitute 11.4 percent of machine building output, compared with a planned level of 9.2 percent. These successes, however, have not been accompanied by comparable increases in commissionings, production capacity, or across-the-board improvements in product quality or in the technology embodied in new products. In fact, only 68 percent of the state's priority projects scheduled for commissioning last year were actually completed, with shortfalls in all sectors of the economy (see figure 2). Consequently, the total value of uncompleted construction projects increased by 8.7 percent over 1987. In addition, according to *Izvestiya* commentator Yuriy Rytov, scheduling and supply miscalculations resulted in over 14 billion rubles worth of equipment simply waiting to be installed at the end of the year.

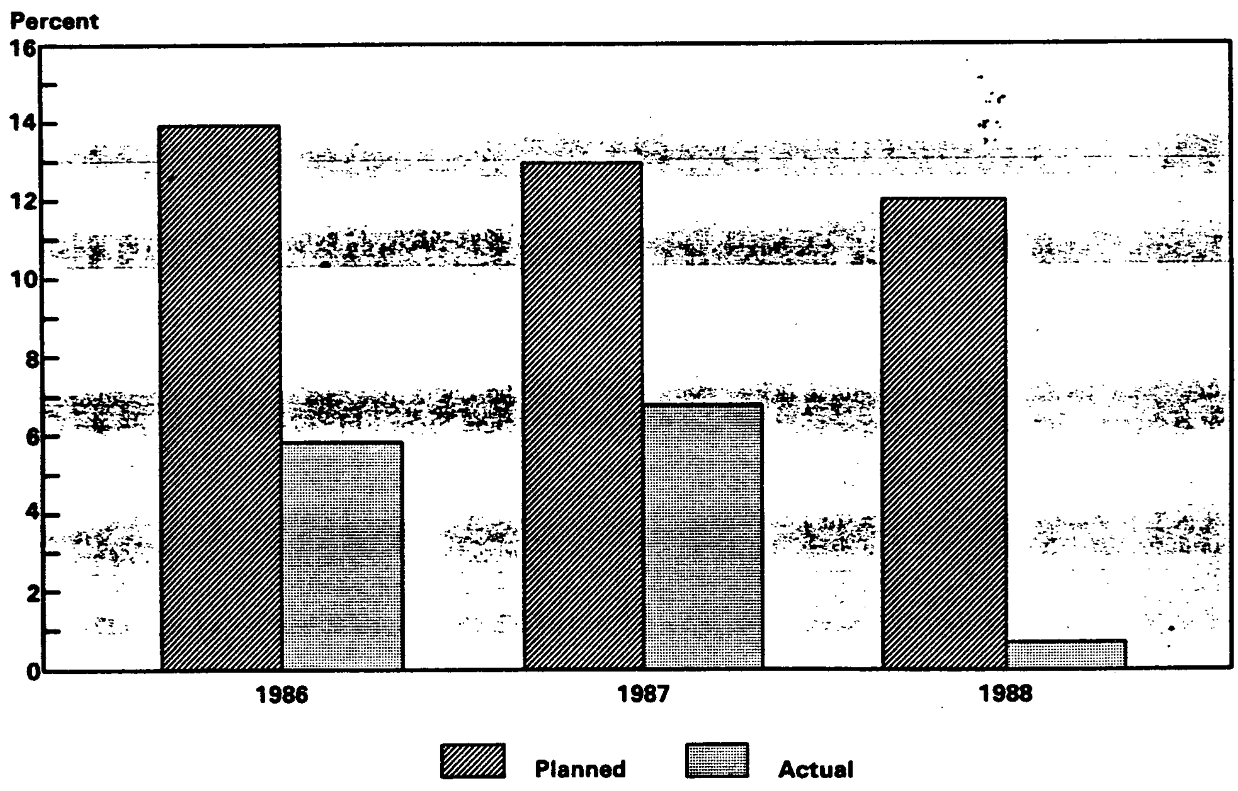


Figure 2. USSR: Reported Growth in Commissioning of New Capital Assets.

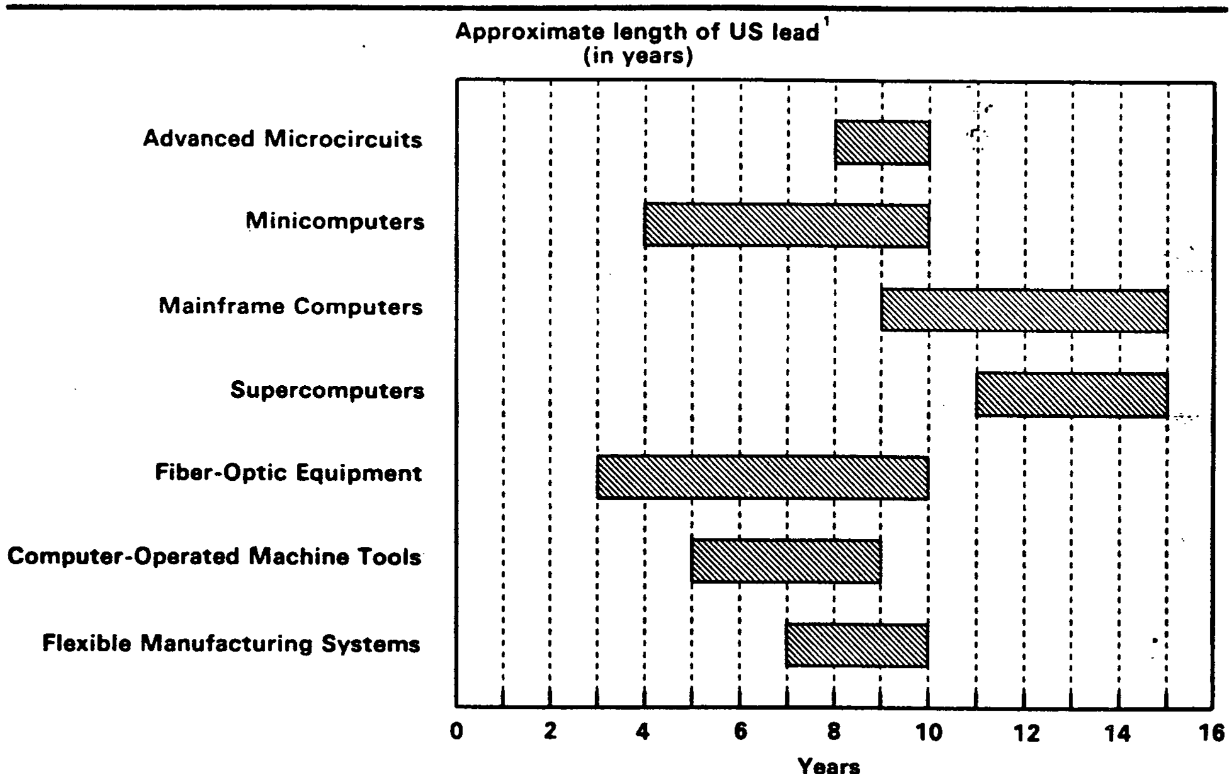
Confusion accompanying implementation of decisions to reorganize the construction industry on a regional basis, to shift construction activity toward housing and other social-cultural purposes, and to switch construction organizations to self-financing undoubtedly contributed to the growth in unfinished construction. In addition, local officials and enterprises took advantage of increased autonomy to restart pet construction projects Moscow had halted in 1986 and 1987 — in effect dissipating scarce construction resources. The pace of factory modernization suffered — commissionings of computerized processing centers and robotized lines actually fell — and shortfalls appeared in the planned output of heavy electrical machines, turbine generators, chemical machinery, metal-working machine tools, and ball bearings.

To make matters worse, much of the machinery produced in 1988 failed to meet Moscow's expectations for higher quality. Prime Minister Ryzhkov again complained that machine tool builders made too many manually operated machine tools and too few numerically controlled ones. According to the Soviet press, almost a quarter of newly produced machines purporting to meet world technological standards failed to do so. This trend must be particularly worrisome to Soviet leaders, as they struggle to overcome large — and in many areas growing — technological lags behind the West (see figure 3).

Economic Reform. Meanwhile, Gorbachev's economic reform package — which faced its first real test in 1988 — did little to help matters. Almost without exception, implementation of the reforms (see table 1) proved to be disruptive.

Among the reforms introduced or extended last year were measures designed to:

- Slash the number of centrally mandated output targets — now known as "state orders" — and give the enterprises



[1] US lead is based on projections of the time required for the USSR to achieve series production of technologies like those in series production in the United States.

Figure 3. Estimated Soviet Lag Behind the United States in Key Technologies.

Table 1
Soviet Economic Reforms: A Status Report

Reform	Major Purpose	1988 Results	1989 Goals
Enterprise self-financing	Enterprises will bear full economic responsibility for the results of their activity. Investment will be financed through an enterprise's own resources.	Enterprises producing 60 percent of output in the economy reportedly operated on self-financing.	Reform is to be extended to 100 percent of industry and agriculture; planners "hope" to complete changeover of nonproduction sphere to same principles.
Regional self-financing	Republics and local governments will have a greater role in forming their own budgets and will be expected to cover a greater share of their expenditures.	Not yet introduced.	Reforms to be introduced in Estonia, Latvia, Lithuania, Belorussia, Moscow City, Tatar ASSR, and Sverdlovsk *Oblast*.
Planning	Enterprises will produce only a portion of their output in compliance with mandatory state orders and will be given greater latitude in determining the rest.	State orders made up 86 percent of industrial production.	State orders are to make up 40 percent of industrial production.
Supply	Only "scarce" producer goods and supplies for state orders will be rationed by the state. Other supplies will be distributed through a wholesale trade system to allow free purchase and sale between suppliers and buyers.	Only 4 percent of industrial output was distributed through wholesale trade.	About 10 percent of total industrial production under wholesale trade; 50-55 percent of sales through state supply networks operated on wholesale trade.
Wages	Entire wage and salary structure in the production sector is to be overhauled. Increases will depend on an enterprise's ability to finance them and be tied to increases in productivity.	Contrary to the reform, wages rose by 7 percent while officially reported labor productivity rose by only 5 percent.	No announced goal. 1988 goal was 60-70 percent of work force.
Foreign trade	Allows selected ministries and enterprises to engage directly in foreign trade and enter into joint ventures.	25 percent of exports and 44 percent of imports were conducted directly by enterprises.	Beginning 1 April, all enterprises have right to engage in direct foreign trade subject to some constraints not yet disclosed.
Retail prices	Will be made more flexible and will better reflect supply and demand, probably resulting in higher prices for foods, housing, and consumer services.	Not scheduled to be implemented.	None. To begin only after full public discussion.

more authority to make their own production decisions.

- Reduce the central rationing of supplies and gradually replace it with a system of "wholesale trade" that allows enterprises to freely purchase their supplies from other enterprises, manufacturers' outlets, or territorial supply organs.
- Institute a system of economic accountability ("self-financing") that allows the enterprises to keep a larger percentage of their profits in return for footing more of their own expenses.
- Encourage the formation of independent businesses (cooperatives) to improve the quality and availability of consumer goods and services.
- Expand long-term leasing arrangements in agriculture to encourage greater individual initiative and responsibility.

Given the enormous bureaucratic inertia that plagues the Soviet economy, even well-conceived and well-implemented reforms would inevitably have been disruptive. The disruptions occasioned by these reforms, however, also reflected a number of problems in both their design and their execution. The most serious of these were caused by the decision to introduce a package of fundamentally interdependent measures gradually and sequentially, leaving full implementation of two of the most essential reforms — those in pricing and wholesale trade — until last. The result was a series of "disconnects" that reduced the effectiveness of the package as a whole. For example, the attempt to implement self-financing before reforming the price structure meant that profitability could not be used as an accurate measure of enterprise efficiency. It was partly to compensate for these pricing inequities that the ministries continued to prop up unprofitable enterprises and rely extensively on state orders, undermining the intent of the reform.

Implementation of the reforms was also made more difficult by their introduction in the midst of a five-year plan that had been adopted before the reforms were worked out. As a result, enterprise managers were asked to undertake major reforms while at the same time meeting high output targets. Holding the ministries responsible for meeting those targets virtually guaranteed their continued interference in enterprise decisionmaking.

These design problems were compounded by execution of the reforms in ways that distorted their original intent. For example:

- Bureaucratic foot-dragging on the conversion to wholesale trade forced an even greater dependence on the central supply system than was envisaged by the 1988 plan.
- Some private businesses set their prices at exorbitantly high levels — a move that discredited the cooperative movement in the eyes of many consumers.
- When centrally set state orders were reduced, ministries stepped in to establish their own state orders that often accounted for much — if not all — of an enterprise's capacity, thereby circumventing attempts to decentralize production planning.
- Leasing arrangements were interpreted by many farm managers in ways that gave the individual farmer no more incentive to increase his production than he had under the old system.

Growing Popular Dissatisfaction

While the leadership's efforts to restructure the economy were floundering, the regime encountered growing popular discontent over its failure to improve living standards. In laying out the 12th Five-Year Plan (1986-90), Gorbachev had originally told consumers they would have to sacrifice in the short run until economic reform and the industrial modernization program began to yield results. The regime stuck to this policy through most of 1986 and 1987, but speeches by Gorbachev and other senior officials during 1987 signaled the realization that Soviet workers expected more goods and services up front. To counter growing skepticism among the population as to the benefits of *perestroyka* and otherwise build support for the regime, the Soviet leadership had promised to improve the availability of goods and services — especially food — and the quality of life during 1988. Indeed, in laying out the plan for 1988, then Gosplan Chairman Nikolay Talyzin said that consumer goods production was to be "considerably in excess" of the 12th Five-Year Plan targets for that year.

Consumers, however, had little cause for satisfaction in 1988. Per capita consumption grew, according to our estimates, by only about 1.5 percent and would have been stagnant had consumption of state-produced alcohol continued to fall. Reduced farm output, processing, marketing, and distribution problems, and the inadequacy of storage facilities resulted in food shortages and widespread consumer complaints. According to the Soviet press, "interruptions in the supply of beef" affected 80 percent of the major cities. The availability of nonfood consumer goods improved only slightly as well, and industry continued to be criticized by Soviet leaders for the poor quality of its goods. According to Premier Ryzhkov, the Soviets estimate that the unsatisfied demand for consumer goods last year amounted to approximately 90 billion rubles — by our estimates about 20 percent of total consumer purchases of goods and services.

The goods that were available, moreover, were often priced higher than in previous years. Indeed, since Gorbachev became General Secretary in 1985, prices in collective farm markets — where a large share of meat, fruit, and vegetables is purchased — have risen almost 20 percent, due to poor supply of these goods in state stores and rising consumer demand. Similarly, average prices for manufactured goods have risen sharply, primarily because many enterprises either artificially labeled some of their products as "new," allowing them to increase prices, or stopped manufacturing cheaper varieties of a given item.

The difficulties with mounting inflationary pressures last year were due primarily, however, to the emergence of large-scale budget deficits, resulting from a rise in state spending for food subsidies, defense, investment, and the support of unprofitable enterprises, and near stagnation in the growth of government revenues. We estimate that in 1988 the deficit rose to roughly 9 percent of Soviet GNP (see figure 4). Moreover, as part of the wage reform package introduced in 1988, enterprises were given much more control over wages. This allowed enterprises to raise wages far in excess of productivity increases, thereby contributing to increased demand for consumer goods that were already in short supply (see figure 5).

All of these factors led during 1988 to a growing disparity between consumer expectations and actual results (see table 2). The most striking example of popular dissatisfaction came during Gorbachev's much-publicized trip to Krasnoyarsk in September 1988, where he was besieged by local residents complaining of poor housing, food, schools, and hospitals. Indeed, commentary in the Soviet press and widespread worker expressions of unhappiness suggest that Soviet citizens saw themselves worse off in 1988 than previously.

Rethinking Strategy

The lack of progress on economic *perestroyka* and the surge in consumer discontent last year highlighted for the Soviet leadership the serious-

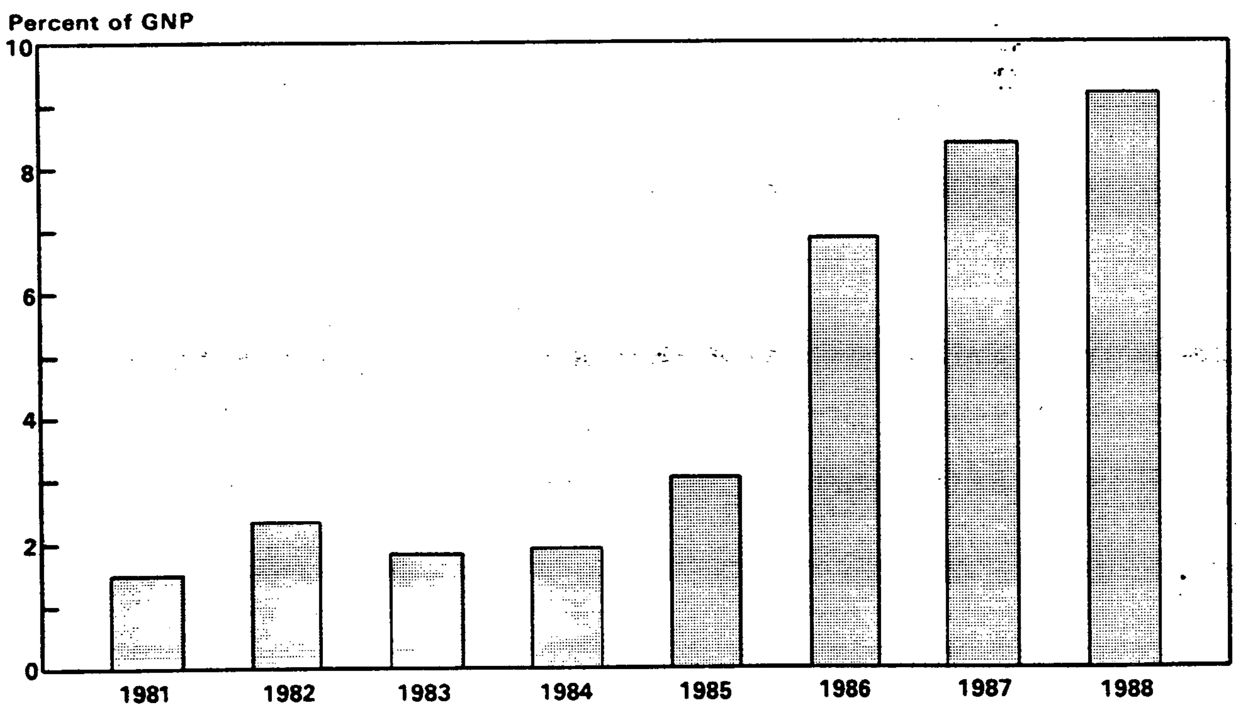
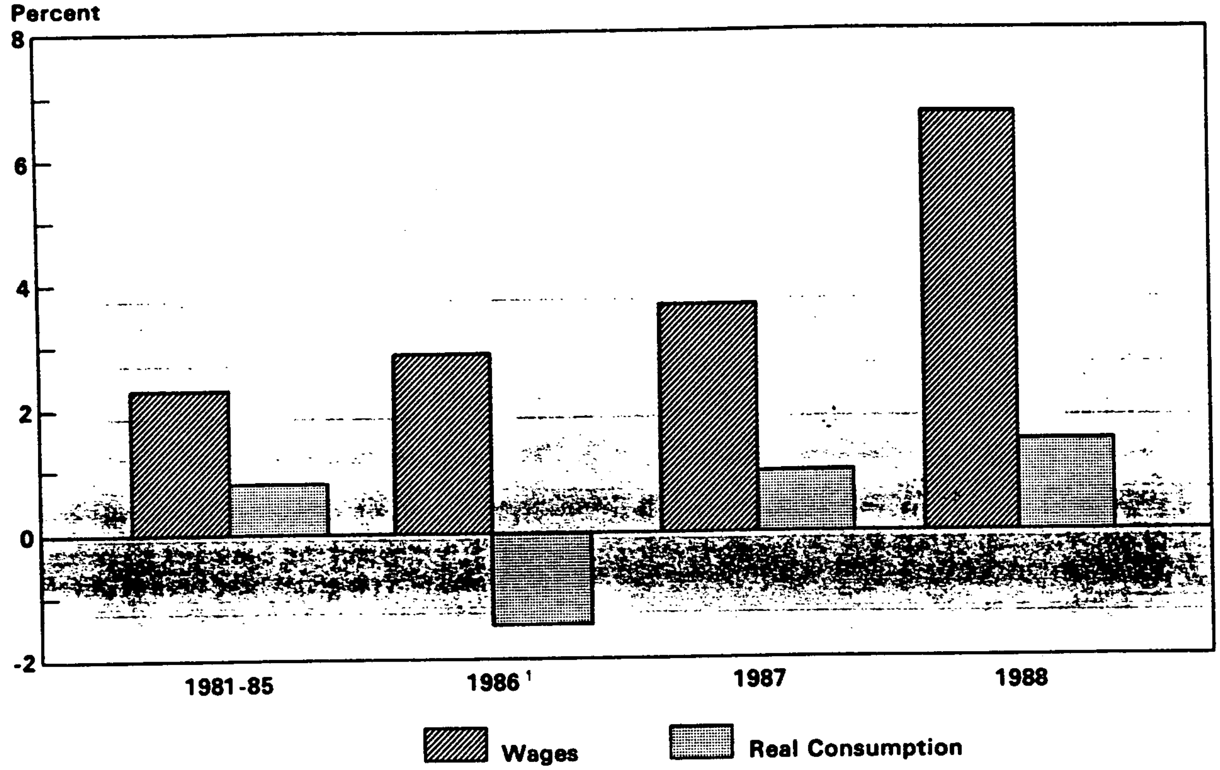


Figure 4. USSR: Estimated State Budget Deficit, 1981-88.



[1] The decline in per-capita consumption in 1986 reflects the drop in alcohol consumption.
[2] Workers and employees.
[3] Average annual rate of growth.

Figure 5. USSR: Comparison of Reported Growth in Average Monthly Wages[2] With Estimated Growth in Real Per-Capita Consumption.[3]

ness of the problems the USSR faces, as well as the extent of the economic and social disruptions to be expected during the transition to a "reformed" economy. Indeed, we believe that the growing recognition that his campaign to revitalize the economy was simply not working has led Gorbachev to alter his basic approach to solving the country's economic problems. In the clearest manifestation of this shift in course, Gorbachev has acknowledged that consumer welfare must be substantially improved soon if the regime is to develop broad-based popular support for *perestroyka*. He put forward a 1989 plan that gives consumer welfare a higher priority than did previous plans: production of consumer goods is slated to grow by 7 percent, rather than the original target of 5.7 percent. Minister of Light Industry Vladimir Klyuyev has also stated that during 1989-1990, output of consumer goods will be 9 billion rubles higher than the plan target. To raise the output of consumer goods, Gorbachev has reverted to the traditional strategy of bringing additional production resources to bear, as opposed to relying on increased efficiency. What sets Gorbachev apart from his predecessors is that these resources are to come primarily from defense.

The Soviet leadership has also realized that it must restore financial order to the economy, primarily by tackling the budget deficit, before it can bring inflationary pressures under control. To this end, a high-level government commission chaired by Ryzhkov submitted a program in mid-February 1989 for reducing the deficit. Expenditures are to be slashed by cutting defense spending and by re-

Table 2
Summary of Selected Indicators of Consumer Welfare

Indicators[3]	Performance Measures[1] 1986	Performance Measures[1] 1987	Performance Measures[1] 1988	Popular Perceptions[2] 1988
Total Consumption	-	0	0	-
Meat	0	0	0	-
Other foods				
Vegetables	0	-	-	
Fruit	+	-	-	
Durable goods	+	0	0	0
Clothing	0	0	0	0
Personal care and repair services	0	+	+	0
Housing	0	0	+	0
Health care	-	0	+	0
Inflation	0	-	-	-

NOTE:
+ = improvement
0 = significant change
- = deterioration

[1] Performance is measured by comparing an indicator's rate of growth with the growth rate achieved during 1981-85, the 5-year period that preceded the Gorbachev era.

[2] Based on analysts' judgments of the perception of citizens in the USSR as to how living standards changed under Gorbachev — through December 1988 — in comparison with the first half of the 1980s.

[3] All indicators, except inflation, are measured in per capita terms.

ducing state centralized investment by 7.5 billion rubles from what was originally planned.

Gorbachev has also apparently decided to slow substantially the pace of those economic reforms, such as the elimination of price subsidies, that would require sacrifices on the part of the consumer. Leonid Abalkin, the director of the Institute of Economics of the Academy of Sciences and a leading advocate of reform, recently admitted that the failure to meet consumer demand, combined with the higher budget deficit, had prompted a rethinking of priorities that would slow the reform effort, with the first real results of reform not to be felt until 1995.

Trading Guns For Butter. Over the past year and a half, Gorbachev has increasingly called on the defense industries to step up their support to the civilian sector. In March 1988, he gave them responsibility for reequipping most of the 260 plants from a disbanded civilian ministry that manufactured equipment for food and consumer goods production.

In September, in an effort to increase their incentive to do more for the consumer, the Council of Ministers passed a decree that allows the defense industries to retain profits from above-plan production of consumer goods during 1989 and 1990; previously they had to remit most profits to the state. At the same time, defense industries were publicly criticized for not doing more. Ryzhkov warned that anyone who failed to support the consumer goods program was "making a big mistake."

In the past, attempts to prompt the defense industry to support the consumer goods and the modernization programs have been relatively unsuccessful because the leadership did not apply substantial pressure and was unwilling to pare back military demands. Last year was no exception. We estimate that Soviet defense spending, as measured in constant 1982 rubles, grew by roughly 3 percent — in line with the growth rates of the past several years. Procurement of weapon systems was again a major contributor to growth. Expenditures on ship procurement rose sharply, caused primarily by an increase in spending on both strategic and general purpose submarines. Missile procurement — particularly for intercontinental ballistic missiles (ICBMs) and strategic surface-to-air missiles — also displayed strong growth.

Last year, however, Gorbachev took several actions that evidently were intended to lay the groundwork for future military cuts. At the 19th Party Conference in June 1988, the leadership characterized the threat from the West as declining, while charging that the expenditures of "huge sums" on weapons and the neglect of political means had weakened both the economy and national security. Numerous commentators, for example, criticized the deployment of the SS-20 missile as a waste of badly needed resources and a move that intensified political strains between the Soviet Union and the West. The Conference's response to such complaints was to mandate that future improvements in military capability be based on qualitative rather than quantitative factors, and that political considerations be given greater weight before new weapon systems are developed and deployed. Soviet spokesmen began implying that this would result in lower defense expenditures, while other officials stated that the increased civilian demands on defense industries could reduce military production.

On 7 December at the United Nations, Gorbachev moved from hints and suggestions about his plans for defense to more specific promises by announcing major unilateral cuts in Soviet military manpower and equipment to be carried out during 1989 and 1990 (see table 3). During a meeting with the Trilateral Commission in January 1989, Gorbachev expanded upon this pledge, promising that the defense budget will be cut by 14.2 percent and the production of weapons and military equipment by 19.5 percent during the same period. Soviet commentators subsequently said that the promised cuts in defense spending will be applied to "total defense expenditures" rather than to the small portion of this total published in the annual state budget (see inset on page 12).

Table 3

Promised Soviet Force Reductions in Eastern Europe, USSR, and Mongolia

6 Tank Divisions From Eastern Europe

4 from GDR
1 from Czechoslovakia
1 from Hungary

Tanks

10,300 total

- 5,300 from Eastern Europe
- 5,000 to be "liquidated," others converted to tractors and training vehicles

Artillery

8,500 total

Aircraft

800 total

- Parts of planes to be used as spares
- Ground support equipment to be "redistributed"

Personnel

500,000 total

- 240,000 from European part of USSR
- 60,000 from southern part of USSR
- 200,000 from eastern part of USSR

Mongolia

3 of 4 ground force divisions to be withdrawn
Air forces to be eliminated

For all the Soviets' show of openness on their defense spending plans, some crucial points about Gorbachev's pledge remain unclear. Moscow has not, for example, indicated whether the promised 14.2-percent cut applies to 1988 spending levels or to the expenditures planned for 1989 and 1990. Similarly, it has not indicated whether the defense budget is to be reduced in real or only nominal terms — i.e., whether the cuts will be made after or before the budget is corrected for inflation. Moreover, the Soviets have yet to reveal any figures on the level of their total defense spending. This continuing silence makes it difficult to assess the size of the promised defense spending cuts. Given the distortions that historically have characterized Soviet economic and financial statistics, this difficulty almost certainly will persist even if the Soviets make good on their pledge to release their "total defense expenditures."

In view of the problems inherent in measuring Soviet defense expenditures, moreover, confirming the implementation of the promised spending cuts will require substantial evidence of reductions in Soviet forces and the flow of weapons and equipment to them. In many cases, Moscow will provide substantial publicity — both for domestic and foreign audiences — on specific cuts. In some areas, national technical means will provide the West with independent confirmation. In other areas, such as research and development, cuts in spending will be far more difficult to monitor.

If the promised cut is to be applied to a defense budget as large as we estimate Moscow's to be — about 15 to 17 percent of Soviet GNP — then the resource savings involved will be substantial. Indeed, our estimates indicate that to reduce their total defense budget by 14.2 percent, the Soviets would have to go beyond the cutbacks in military programs that they have specifically promised to make.

By our estimates, only about a third to a half of the 14.2-percent reduction can be accounted for by savings associated with withdrawing from

Glasnost on the Soviet Military Budget?

In the past, the Soviets have released annually a single figure for the "defense budget." In August 1987, Deputy Foreign Minister Vladimir Petrovskiy publicly announced that this figure represented only Ministry of Defense expenditures for maintaining military personnel, military pensions, logistics, military construction, and "a number of other articles." He also pledged that comprehensive defense spending data would be released following a price reform which would "allow comparability with the West." Other spokesmen quickly claimed that this would happen in "2 or 3 years."

There have been a number of statements recently in the Soviet press — including those from government officials such as Foreign Minister Shevardnadze — calling for early release of the Soviet defense budget. Pro-reform elements, who want to use the data to strengthen their case for transferring resources from production of defense to civilian goods, are apparently growing impatient with what they perceive as stalling by opponents of *perestroyka*. They have said that they would like to see the new Supreme Soviet play a greater role in determining allocations to defense.

The Soviets may release defense spending data this year because of mounting pressure. Even then, however, it will take time and strong political support from Gorbachev for the Supreme Soviet to shape Soviet defense spending policies in the face of entrenched military interests.

Meanwhile, claims by the Soviets that they are unable to release their defense budget because they themselves do not know what they are spending are increasingly less credible, now that Moscow has announced a very specific — 14.2 percent — promise of a reduction in total military expenditures. Indeed, continued Soviet delays in releasing a "true" defense budget will leave the USSR open to the charge that it is using the time to devise a plausible but still deceptive or uninformative set of figures.

Afghanistan, complying with the Intermediate-Range Nuclear Forces (INF) Treaty, and carrying out the reductions promised at the UN. Although some additional savings will come from reduced demand for weapons — that is, reduced procurement — as a result of the force restructuring Gorbachev promised during his UN speech, we believe the Soviets will have to do much more than what they have publicly disclosed to achieve reductions amounting to 14.2 percent.

Actions the Soviets might take to meet their promise of a defense spending cut include reductions in military research, development, testing, and evaluation (RDT&E). During 1988, Defense Minister Dimitriy Yazov, Deputy Defense Minister for Armaments Vitaliy Shabanov, and Deputy Foreign Minister Aleksandr Bessmertnykh all criticized the USSR's military RDT&E. Taken together, these criticisms suggest that future Soviet RDT&E may be concentrated on a smaller number of projects, but that those projects funded may be more technologically ambitious than was typical in the past. Projects that would result in only minor improvements might be rejected as simply not being worth the effort. At the same time, technologically ambitious projects designed to counter very distant or only hypothetical threats might also be rejected. As noted above, however, cutbacks in military RDT&E would be especially difficult to confirm.

The Soviets probably also hope that some of the promised spending cuts can be implemented under or in anticipation of future East-West arms reduction agreements, although they recognize that agreements will be difficult to conclude before their January 1991 deadline for implementing the reductions. Conclusion of a Strategic Arms Reduction Talks (START) treaty, for example, could save the Soviets several billion rubles a year. Moreover, the Soviets probably also hope that a START agreement — particularly when combined with their unilateral reductions in conventional forces — will lead to negotiated reductions in the conventional area or, at a minimum, weaken NATO's resolve for conventional and tactical nuclear weapons modernization. Any accommodation with NATO that would allow them to forgo or reduce expenditures on modernizing conventional forces could result in substantial savings.

According to Bessmertnykh, the Soviets also expect their foreign policy to contribute to the country's economic goals not only directly by achieving arms control agreements, but indirectly by promoting a more benign international environment that will allow them to redirect resources from defense to the civilian economy without damaging the USSR's security. Easing tensions with the People's Republic of China, for example, might allow the Soviets to reduce the size of their armed forces in the eastern Soviet Union to a greater extent than they already have promised.

The Soviets have indicated that the 14.2-percent reduction in the defense budget will be carried out by 1991, but transferring the freed-up resources to civilian uses — and fully realizing economic benefits from them — is likely to take more time (see inset). The Soviets themselves have admitted that in many cases they are just beginning feasibility studies on converting final assembly plants from military to civilian uses. They have indicated that they intend to convert existing plants from defense to civilian production rather than transferring manpower and equipment from defense plants to civilian enterprises. Unless, however, the converted defense plants are given the same priority in resource allocation that they have enjoyed historically, their ability to satisfy the requirements of their new civilian customers may not be as great as it was for the military.

In our view, Gorbachev will have strong incentives to keep defense spending down, at least through the period of the 13th Five-Year Plan (1991-95). This would be consistent with the government's announced plans for the defense industries to aid the consumer sector during the same period. Council of Ministers Deputy Chairman

Transferability of Resources

Ultimately, the degree to which resources are transferable from one use to another is a question of time. It is relatively easy to plan for shifts in resources that will occur several years into the future. If it is known now, for example, that a given weapon is not going to be built in the 1990s, then the plant and machinery needed to produce that weapon do not have to be built and the materials and intermediate goods intended for that purpose can be readily diverted to a different plant or purpose. Shifting the existing stock of resources, or those planned for defense within the next few years, in contrast, can be more difficult, depending upon the resource involved:

- Most materials used in weapons production — specialty steels, construction materials, and engineering fibers, for example — are both readily transferable and in great demand in the civilian sector.
- Intermediate goods — such as bearings, composites, and, most important, microelectronics — are also relatively easy to transfer and important for civilian production.
- The Soviets would benefit from the transfer of large numbers of defense-industrial workers and, to a lesser degree, from reduced conscription demands resulting from personnel reductions.
- Transfers of defense-related industrial plant and equipment would prove more difficult, but the USSR would derive clear benefits from the reallocation of high-quality production machinery to civilian production.

Igor' Belousov has said, for example, that during 1988-95 the defense industrial ministries are to provide 17.5 billion rubles of machinery (out of a total of 37 billion rubles) for the food processing sector — almost as much as the total value of machinery installed in food processing from 1980 to 1987 (see table 4). They are also to produce 7-8 billion rubles worth of goods for light industry, as well as increase output of construction materials, medical equipment, and plumbing supplies. Reflecting this greater emphasis, Ryzhkov has stated that the share of civilian goods produced by the defense industries would increase from 40 percent currently to 50 percent in 1991 and to some 60 percent by 1995. On the surface, this suggests further efforts to reduce the defense burden during the 13th Five-Year Plan.

Selectively Seeking Outside Support. Although the Soviet leadership appears firmly committed to seeking indigenous solutions to economic problems, it is not ignoring potential gains from trade and other foreign relations. Indeed, debate within the leadership over the role foreign resources can play in economic restructuring has intensified over the past year. A number of Soviet economists have, in particular, called for stepped-up imports of consumer goods to placate a restive populace and, hopefully, provide sufficient incentives to give *perestroyka* a boost.

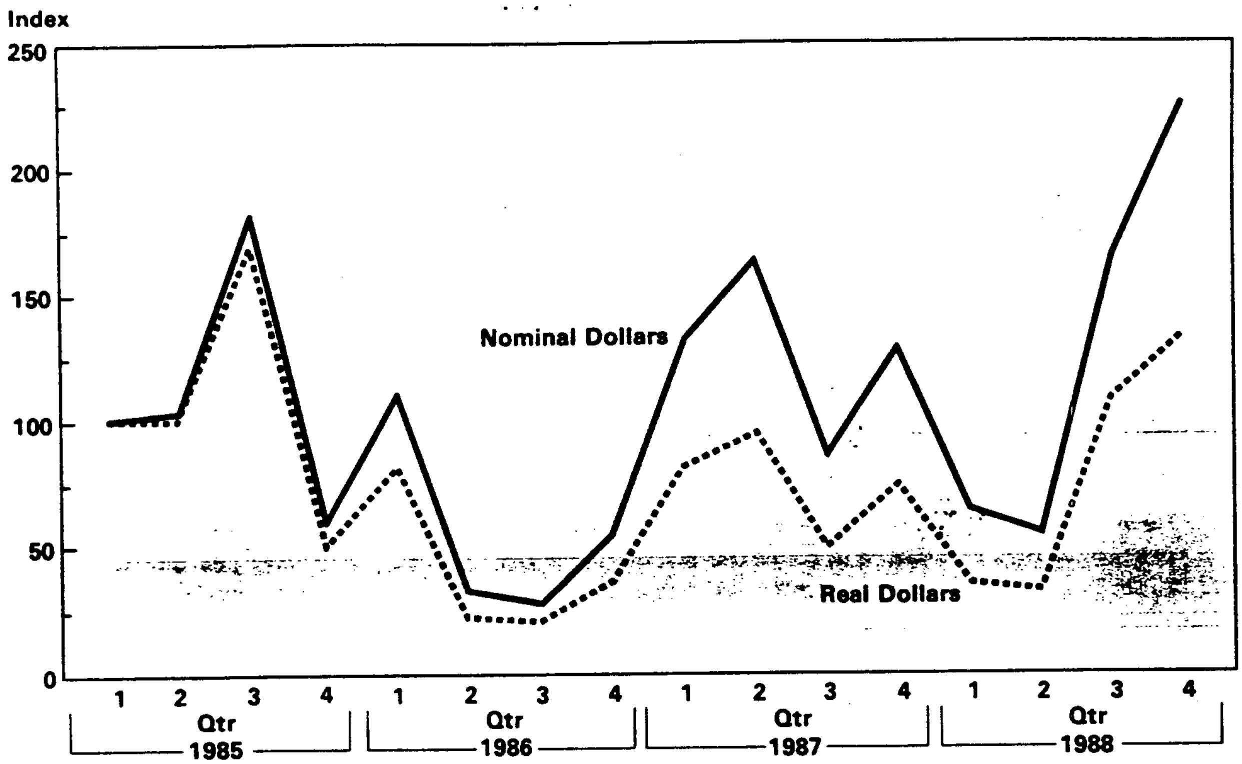
Table 4
Contributions of Soviet Defense-Industrial Ministries to Food Processing Modernization

Ministry	Food Processing Equipment
Aviation	Fruit and vegetable processing Starch and syrup production Pasta production Canning industry Packaging of dry goods
Defense Industry	Livestock and poultry processing Ice cream production Canning industry
General Machine Building	Bakeries and sugar refineries Confection industry Processing of fats and oils
Medium Machine Building	Dairy industry
Radio Industry	Refrigeration equipment
Shipbuilding	Bakery ovens

The leadership has not, to be sure, abandoned the conservative approach toward increasing imports that it has pursued in recent years. For the most part, the current leaders — like those before them — remain sensitive to the national security implications of becoming financially overextended. They are particularly reluctant to boost imports substantially without greater confidence in their ability to pay for the goods as well as to effectively absorb — and ultimately diffuse — imported technology. Moscow's debt runup in the mid-to-late 1970s, the subsequent application of Western economic sanctions against the USSR, and Eastern Europe's own financial plight earlier in this decade are still cited frequently in Soviet discussions of foreign economic policy.

The recent pattern of Soviet trade and financial activities nevertheless is sending mixed signals on Moscow's immediate plans. Soviet orders of machinery and equipment from the West climbed in the third and fourth quarters of last year, suggesting a boost in these imports over the next 2 years (figure 6). Conversely, the Council of Ministers has recently proposed that imports of consumer goods be increased in 1989, with the increase apparently to be financed by reduced imports of capital goods. And while net new borrowing rose several billion in the first half of 1988, the trend appeared to have tailed off during the latter half of the year. Moreover, the program to arrange sizable Western credit lines for the import of machinery for consumer goods production has quieted considerably. Sizable lines were finalized only with consortiums of West German and Italian banks, and these are being drawn down very slowly. Most important, despite growing consumer unrest, the Soviets have yet to arrange for a substantial infusion of Western consumer goods.

To the extent Moscow is seeking Western inputs, it is making a concerted effort to ensure that it will neither waste what it obtains nor pay more than is necessary. For example, Moscow is continuing its aggressive pursuit of joint ven-



Note: The seven countries — Austria, France, Italy, Japan, Great Britain, the US, and West Germany — usually account for 90% of total orders.

Figure 6. USSR: Orders of Western Machinery and Equipment from Top Seven Countries, 1985-88.

tures with Western firms to improve its chances of more effectively absorbing Western equipment and know-how (see inset on page 16). Moscow is also seeking ties to international organizations such as the General Agreement on Tariffs and Trade (GATT), apparently hoping that membership will increase its knowledge of world markets and lead to increased exports.

Mapping A New Investment Course. During the past year, Soviet commentators have expressed misgivings about the long-term efficiency of their investment strategy that emphasized rapid growth of investment and targeted heavy industry for top priority. The Soviet press was particularly critical of the waste and inefficiency involved in large-scale investment projects such as dams, canals for water diversion, and huge hydroelectric installations. Even the completion and maintenance of the Baykal-Amur railway (the BAM) — a showpiece investment project — was questioned. The move toward more efficient use of investment resources resulted in proposals last year to close a number of major projects — the Dnepr-Bug hydraulic complex, the planned world's largest hydroelectric power complex on the Yenisey River in Northern Siberia, and the Volga-Chogray canal project — and culminated in March with an announcement that investment spending financed by the state budget would be cut by 7.5 billion rubles in 1989 from what was originally planned. These cuts are to come from halts in regional development programs and land reclamation projects. From 1990 on, moreover, state expenditures for investment are to be further restricted by giving enterprises more responsibility to finance investment through their own funds and interest-bearing bank loans.

Recent Trends in Soviet Joint Ventures

The USSR's continued "hard sell" of joint ventures, as well as its willingness to grant concessions during project negotiations, resulted in a substantial increase in contract signings last year. As of December 1988, Moscow reported that 191 joint ventures had been registered with foreign firms, 164 of them involving Western participants. Only 20 joint ventures had been registered by the end of 1987. West Germany, the US, Italy, France, Great Britain, and Finland were the leading partners in terms of the number of agreements actually signed.

Despite the impressive growth in the number of deals concluded, the Soviet leadership is far from satisfied with the progress of its joint-venture program. Foreign firms have committed to make relatively small investments — in the aggregate only about one-third of the estimated total $1.3 billion investment. Well over one-half of the projects with Western firms involve capital contributions of less than $10 million. Service and consumer-related projects — rather than deals that will enable Moscow to acquire advanced technologies — continue to dominate the list of complete contracts. The Soviets have, however, completed several small deals to assemble personal computers and develop software, and some ventures in the machine-tool area are also under way. The transfer of human capital — the technical skills, expertise, and know-how of Western labor and management — has also been far less than the Soviet leadership anticipated.

The Soviets have expressed interest during the past year in establishing "free economic zones" in the Soviet Far East and the Baltic states, largely as a means to attract additional joint-venture investment. Joint enterprises operating in these zones would be granted concessions on taxes and customs payments. Research on this topic is in an early stage. Although a few zones may be established as early as late 1989, it will take several years — and probably better terms and conditions than are likely to be offered initially — before they attract substantial foreign investment.

New regulations attempt to address some Western concerns by allowing foreign partners to exercise greater management control over joint-venture projects and reduce their hard currency outlays. Western businessmen are reportedly disappointed, however, that Moscow failed to offer solutions to the problem of profit repatriation — the main barrier to foreign involvement. A group of six US companies known as the American Trade Consortium has recently signed a framework agreement that will allow the members to overcome this problem by pooling their hard currency revenues, with a US oil company shouldering most of the burden by exporting products from a potential petroleum joint venture. Even if the profit repatriation angle can be surmounted, additional problems confront joint ventures once they are established, including high tax rates, unreliable material supplies, unexpected hard currency costs, and a shortage of working and living accommodations.

In line with the increased emphasis on the consumer, investment for the development of the consumer goods sector is being increased significantly while heavy industry will receive less investment. Investment in the food industry is to rise by 46 percent and in the meat and dairy industry by 60 percent. When imported machinery is included, equipment for light industry retooling is to increase 30 percent. In addition, in July 1988, in a move to prevent limited R&D resources from being squandered, the Soviets announced that henceforth only those machinery designs that supported one of the 44 priority directions of technological development would be centrally funded (see table 5). At least half of the 44 directions are clearly intended to benefit the consumer.

Meanwhile, Moscow has taken major steps to focus its modernization effort. The primary emphasis remains on the machine-building sector and the need to modernize the technology of enterprises. In December 1988, the Politburo reaffirmed the machine-building sector's priority role as the technological basis of economic modernization and gave the Machine Building Bureau, the ministries, and Gosplan 6 months to plan "radical measures" to improve machine building's performance (see inset below).

If this trend holds, the planned average annual rate of investment growth in the 13th Five-Year Plan will probably be lower than the 5-percent rate of the 12th. Investment growth is more likely to be in the 1- to 3-percent range, as resource constraints put pressure on state spending across the board. Investment allocations will probably favor consumer-oriented sectors and rural infrastructure — especially roads. Nonetheless, competition for investment resources will remain heated. For example, unless the Soviets are successful in shifting energy production away from oil and toward natural gas, investment in this area will have to increase rapidly to avoid energy shortfalls that would cause economic stagnation (see inset, page 19). Transportation is another sector that will probably need more resources, especially if the Soviets intend to improve the rural infrastructure and help the critical railroads. Consequently, heavy industry and Soviet farms may receive smaller increases than in the past.

Backing Off From Reform. To avoid exacerbating consumer problems, the regime has also decided to back off from some of its planned reforms. Specifically, retail price reform, which was to be implemented in 1991 along with wholesale price reform, appears to have been pushed into the indefinite future. While recognizing its criticality to other reforms, even reform economists are expressing skepticism about its wisdom be-

The Emphasis on Technology

The "radical measures" the Politburo has called for to improve machine building's performance are likely to reflect the leadership's preference for "high tech," and require the introduction of advanced production technologies on a massive scale. Currently, the 1989 plan calls for the Ministry of Instrument Making, Automation Equipment, and Control Systems to increase its output — which is vital to the reequipping of the R&D test base — by 16 percent. The overall production of the crucial components of factory automation — machinery, equipment, and instruments incorporating microprocessors — is to increase by 80 percent, and almost every product newly entering into production will contain microprocessors. To meet this surge in demand for microprocessors, last year four civil machine-building ministries joined the Ministry of the Electronics Industry as producers of electronic equipment.

Moscow also has developed a new strategy to move these technologies onto the factory floor. Previous efforts often led to the piecemeal introduction of flexible manufacturing cells or other automated production technologies into existing factories and resulted in inefficient "islands of automation." The Soviets hope that by concentrating deliveries of advanced equipment to their most obsolete factories, they can skip over the islands of automation stage and convert their worst factories into showcases of computer-integrated manufacturing. Western experience suggests that this is probably a misguided approach — jumping directly to full automation often results in automating existing inefficiencies. The preferred course in the West is to first simplify the production process, then begin to automate where economically justified, and only then to integrate the islands of automation.

Table 5
Focusing Industrial Modernization: 44 Priority Areas

Major Emphasis	Number of Areas	Specific Emphasis	Assessed Needs
Social development	4	Consumer goods Medical equipment Publishing and printing equipment (one not reported)	Color TVs, VCRs, refrigerators, and freezers Diagnostic equipment Finishing, tanning and footwear equipment for light industry Knitting equipment
Food program	8	Automated processing complexes Scaled-down equipment for brigades and private farms Advanced technologies (five not reported)	Processing equipment for dairy industry, fruits, and vegetables Stainless steel equipment Packaging equipment Measuring equipment Beverage equipment Refrigerated storage
Transportation	12	Subway trains Local Trains Improved buses Compact cars (eight not reported)	Locomotives with improved braking and electronic systems Freight cars, especially refrigerated and special-purpose rolling stock Train commo and control equipment Boats, including icebreakers Mechanized loading/unloading equipment
Construction machinery	6	General construction equipment Road laying equipment Road repair equipment (three not reported)	Motors, engines, and valves
Fuel and energy equipment	3	(none reported)	Geophysical equipment High-quality noncorrosive pipes
Metallurgical equipment	3	(none reported)	Scrap steel processors Electric arc furnaces Rolling mills
Machine-building equipment	3	(none reported)	Machine tools Computers Electronics/electrical equipment
Chemical and forestry equipment	5	(none reported)	Processing equipment with automated controls Noncorrosive tanks Engineering plastics Stainless steel, titanium pipes, and valves

Energy: An Investment Wild Card

In response to growing domestic demand, the USSR has become the world's largest energy producer, but the associated costs are skyrocketing. New deposits of oil, coals, and gas are increasingly distant from populated areas and more difficult and costly to exploit. Soviet energy users, however, have not yet been forced to adjust to this new reality. Vast, heretofore easily exploitable reserves have firmly embedded in the minds of the Soviet population the impression of cheap, plentiful energy. Waste remains pervasive in factories and households.

Soviet plans call for energy production to increase by 40 percent by the year 2000 and oil output to remain stable. Goals this ambitious could push energy's share of investment from about 15 percent to nearly 40 percent of the total, usurping resources essential to modernize industry and improve consumer welfare. Curbing growth in energy investment, however, would risk almost certain energy shortfall and economic stagnation. Unless there are major improvements in energy efficiency, the USSR will be hard pressed to sustain more than a 2-percent average rate of economic growth over the next decade. Addressing the shortfall by reducing oil exports would undermine Soviet trade with Eastern Europe and severely crimp Moscow's ability to import from the West.

cause of anticipated public outcry against price increases (see inset, page 20).

Other reforms have been put on hold as well:
- Despite the leadership's promises to reduce state orders substantially in 1989 and 1990, state orders will continue to dominate the consumer sector because of the need to ensure the production of inexpensive goods.
- To correct what Council of Ministers Chairman Ryzhkov called "a great mistake," decisions on wage increases, which were to be the preserve of the enterprise, are now to be monitored by the banks to keep wages from exceeding productivity gains and adding to inflationary pressures.
- In another step to restrain inflation, prices of consumer goods will also be stabilized through stricter governmental controls.

Other reforms, however, particularly those that will benefit the consumer, continue to be pushed by the leadership. Land leasing was endorsed by the recent plenum on agriculture, and Gorbachev laid out bold plans to reduce central controls over the farms. The reform of agricultural procurement prices, originally scheduled for 1991, was moved up to 1990. Also, the regime continued to support the expansion of the private sector, although measures have been introduced to restrict cooperatives in setting prices because of popular resentment over price gouging.

Outlook

We believe that the policy shifts Gorbachev has made have the potential to advance his efforts to revitalize the Soviet economy. As Gorbachev seems to recognize, he must put his financial house in order and regain the support of consumers if he is to proceed with the other parts of his economic agenda. Cuts in investment and defense spending should help ease the deficit problem and provide resources for increasing production of consumer goods. At the same time, the reduced targets for production of capital goods should allow the Soviets to tackle the problem of unfinished construction, allowing them to bring additional capacity on line and thus increase output.

Successful diversion of resources from defense and investment to consumption, however, will be a difficult task, especially given the inefficiencies that plague the Soviet economy. Changing a system that for the past 50 years has emphasized heavy industry into one oriented toward the consumer will be time-consuming and disruptive.

Backing Off From Retail Price Reform

We simply cannot possibly win the price [reform] campaign under the present conditions. No matter how carefully the retail price increase might be prepared and explained to the people, no matter how much compensation will be paid to the consumer, the ensuing situation would not satisfy the majority.

Nikolay Shmelev, Institute of USA and Canada

A reform [of retail prices] would be justified, I think, under certain conditions, First, there must be adequate stability of the consumer market when the supply of goods and money are in balance. Second, there must be sufficiently large stocks of goods to prevent potential negative events. Third, there must be economic competition among state enterprises, between them and cooperatives, and so forth. Do all of these conditions objectively exist today? Not yet.

Leonid Abalkin, Director, Institute of Economics, USSR Academy of Sciences

A year to a year and a half ago I was writing and insisting on [price reform]. Even now I believe that a structural reform of prices is necessary. Only before it was both necessary and possible; now it is necessary and impossible. I hope we will still get to a point where it will once again become possible, but for now the moment has passed.

***Otto Latsis, Deputy Chief Editor,* Kommunist**

The threat of growing inflation, as the experience of Hungary, Poland, and China warns, requires a particularly cautious and gradual approach to the implementation of reforms. It is no use fostering too many illusions about the possibility of putting the consumer market in order by increasing prices.

Oleg Bogomolov, Director, Institute of Economics of the World Socialist System

Moreover, even once the transfer of resources is achieved, there is a substantial risk that such a shift in resource allocation will come to be regarded as a way of avoiding radical reform rather than as a means of preparing the populace for it. In sum, we believe that while the policy shifts Gorbachev has made may buy him time to proceed with the hard parts of his economic program, a key question to be answered in the next few years is whether he will be able to make effective use of this time. To do so, Gorbachev must achieve at least modest near-term improvements in consumer living standards, reduce the budget deficit and the wasteful use of investment resources, devise a comprehensive plan for the implementation of difficult measures such as price reform, and prepare the population psychologically for the sacrifices these reforms will inevitably entail.

Gorbachev, moreover, is likely to face political as well as economic obstacles to proceeding with his program. He will increasingly be held personally responsible for any of its future failures. This situation increases the pressure on Gorbachev to produce results. Moreover, his decision to alter the pace of economic restructuring has made him vulnerable to second guessing — opponents and bureaucrats may see Gorbachev's temporizing as a sign of weakness and become even more recalcitrant. Although the regime has portrayed the defeat of a sizable number of party officials — several at high levels — in the March 1989 elections as a warning to those who are resisting Gorbachev's reforms, the unexpected repudiation of so many party officials almost certainly has strengthened pressure on Gorbachev from more conservative leaders who view his political reforms as a threat to party authority. On the other hand, the election of a bloc of radical reformers beyond Gorbachev's control — such as former Moscow leader Yel'tsin — gives those who have criticized the slow pace of reform a new forum in which to press their demands.

Appendix A

1988 Economic Performance by Sector

Our preliminary estimates indicate that *perestroyka* did little to improve Soviet economic performance in 1988. A poor harvest, supply shortages, widespread failure to meet delivery deadlines, and confusion sparked by reform policies all contributed to a relatively low 1.5-percent growth in GNP — a rate similar to the previous year's.

Industry

Industrial production grew by an estimated 2.3 percent last year. Production was disrupted because of transportation bottlenecks, supply interruptions, and difficulties in implementing economic reform.

Machinery. According to our estimates, output of civilian machinery showed its slowest growth since the early 1980s, finishing only 2 to 3 percent higher than the level in 1987.[1] We estimate that output of consumer durables increased by almost 4 percent last year. Consumer complaints remained widespread, however, as much of the output apparently continued to be of poor quality and consisted of items not highly sought after. We estimate that the growth of producer durables was considerably lower last year than in 1987 — just over 2 percent — reflecting continuing problems implementing the industrial modernization program.

Industrial Materials. The rate of growth of production of industrial materials (chemicals, metals, construction materials, and wood products) in 1988 was an estimated 2.3 percent — a repeat of 1987's disappointing performance. Continued problems with modernization were compounded by the introduction of economic reforms. Mediocre results were registered across the board; growth in two of five subsectors dropped compared with 1987:

- Serious shortfall in output of plastics and resins, intermediate chemicals, and pesticides brought down estimated annual growth in the chemical industry from 2.6 percent in 1987 to 1.8 percent in 1988.
- Output of cement reached a record 139 million tons, helping the construction materials industry to post a 3-percent gain. However, the production of window glass and precast ferroconcrete — both critical to Gorbachev's plans to modernize construction — declined.
- Ferrous metals production rose an estimated 1.7 percent in 1988. Output of crude steel, steel pipe, and rolled steel rose modestly, while iron ore output fell.
- Growth of nonferrous metals production — an estimated 3 percent last year — rebounded to 1986 levels, due in large part to increased utilization of processing capacity and new Western smelting equipment.

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1 Estimating machinery production is becoming particularly difficult because the Soviets have cut back on the release of statistics on various machinery products. While they have increased the availability of information on consumer durables, statistics on producer durables — as well as some industrial materials such as chemicals and wood products — are increasingly scarce. For this reason, our estimates of machinery output should be considered very preliminary.

Appendix A (Continued)

- Strong performance in furniture production and a middling improvement in paper output helped sustain a 2.5-percent increase in the output of the wood products industry. The industry was criticized, however, for shortfalls in production of chipboard and cardboard packaging.

Energy. Despite unresolved problems in the fuels and energy industries, the Soviet Union remains the only major industrialized nation that is energy independent, with the largest proven oil reserves outside the Persian Gulf and 40 percent of the world's natural gas reserves. Energy production in 1988 grew by about 3 percent, although this level of output required 15 percent of total Soviet investment (20 percent if pipeline systems are included). To prevent declines in national production, Moscow will need to make another large boost in *oil-industry* investment. Oil production averaged 12.45 million barrels per day (bbl/d) in 1988, although daily output fell from a high of 12.53 million bbl/d in the second quarter to 12.37 million bbl/d in the fourth quarter. Production in the key West Siberian region — which accounts for two-thirds of national production — has leveled off while production from other regions continues to fall. Without a substantial increase in drilling and new well completions, West Siberian production will soon begin to decline.

Natural gas output again led growth in energy production, reaching 770 billion cubic meters, with increased production from gasfields in northern West Siberia continuing to account for nearly all the growth. Maintaining this robust growth over the next several years, however, will become difficult and expensive. Further expansion in gas consumption will require accelerated construction of local distribution pipelines as well as successful addition of new customers through conversion of existing equipment to gas and wider use of new gas-fired equipment.

Raw *coal production* increased by only 1.6 percent in 1988, and once again the net gain to Soviet energy output is probably less than this due to the declining average energy content of Soviet coal. The trend toward small gains in energy from coal is likely to continue since almost all of the growth in raw coal production continues to come from open-pit mines in the Eastern USSR that produce some of the lowest-quality coal in the Soviet Union. Coal production will probably continue to grow slowly because Moscow is facing technical challenges in exploiting Eastern coal and developing new industrial consumers very slowly.

Electric power output grew by 2.4 percent last year — the smallest gain since 1981. Nearly all of this increase was produced at nuclear and hydro plants instead of at fossil-fueled plants as in previous years. The suspension or cancellation of 12 nuclear plants — involving 34 reactors — means that maintaining the needed 2- to 3-percent annual rate of growth in electricity will become increasingly difficult unless efforts to increase powerplant capacity receive priority attention.

Consumer Goods Industries. Overall output in *light industry* grew by an estimated 2.5 percent in 1988, with most products — except textiles and hosiery — showing higher growth rates than in 1987. Light industry was sharply criticized, however, for the high price of its goods and was accused of using price supplements and contract pricing to boost the price of its goods without making real style improvements. The *food processing industry* also delivered a respectable performance, with increased output of meat, dairy, and fish products offset by a sharp drop in sugar production. The official announcement of the easing of the antialcohol campaign is also reflected in production statistics, with output of most alcoholic beverages showing strong growth. This industry also came in for heavy criticism last year, with complaints of shortages and declining quality.

Agriculture

We estimate that Soviet farm production dropped by about 2 percent in 1988, on the heels of a 2.5-percent drop in 1987. Record highs in production of meat, milk, and eggs led to a 2.6-percent increase in the livestock sector. Still, this was not enough to offset the negative effects of the smallest potato crop in over a third of a century, an 8-percent drop in grain output — from 211 million tons in 1987 to 195 million tons in 1988 — and unchanging vegetable and fruit production. The only bright spot was a 7-percent increase in cotton production. Moscow's efforts to eliminate corruption in the cotton-growing Central Asian republics and to reestablish proper crop rotation — crucial for obtaining higher yields — are evidently taking hold.

Future food consumption may also be undercut by changes in inventories of livestock. The number of hogs held steady last year, but the stocks of cattle, sheep, and goats continued their slide and are now down to 1983 levels. According to some Soviet researchers, the declines in herd size may jeopardize ambitious long-term plans for meat production. In part because of this inventory reduction, per capita meat availability was up by more than 2 percent. Supplies were spotty, however, as marketing and distribution problems resulted in numerous shortages.

Transport

Freight shipments by all carriers increased by 1.2 percent in 1988, the second year in a row of slow growth. Transport plans overall were fulfilled, mainly because the slow growth of industrial output dampened demand for transport services. Shipments were up on the river fleet and pipelines, and virtually unchanged on common carrier trucking. The volume of freight shipments carried by railroads — the main barometer of freight transportation — grew by only a little more than 1 percent in 1988.

Moscow is trying to support future growth in shipments by improving efficiency. Railroad labor productivity continues to soar because of the implementation of the Belorussian railroad experiment that pared down the size of the work force. A program to shift highway freight from departmental carriers to the centralized fleet is making slow progress but promises to improve the notorious inefficiency of overall trucking with respect to labor, capital, and fuel usage. Soviet transport — especially the railroads — nevertheless will require substantial investment to modernize antiquated equipment and expand capacity. For example, severe railcar shortages and slow progress in automating traffic control are constraining growth of rail shipments.

Trade

The USSR's hard currency trade balance took a turn for the worse in 1988 following a strong showing the previous year. On the basis of preliminary data, we estimate that the trade surplus fell over $3.5 billion to about $2.6 billion because export growth could not keep pace with surging imports. The dollar value of Soviet hard currency exports increased about 7 percent last year due to increased arms sales — again on credit — to the less developed countries (LDCs) and growth in nonmilitary, non-energy exports, with the composition of these sales spread over a number of commodity categories.

Appendix A (Continued)

Imports were up nearly 25 percent as a poor harvest fueled a substantial burst in grain purchases. The higher quantity of grain imports — coupled with rising world prices — added at least $2 billion to Moscow's import bill. Sizable growth in imports from countries such as West Germany, Austria, and Japan suggests that machinery and equipment imports also increased last year — some increase was anticipated following a pickup in orders from those countries in 1987. Purchases of consumer goods reportedly rose, albeit not enough to make a visible impact on store shelves. Moscow also boosted imports of oil from the Middle East — largely in payment for arms sales — for resale elsewhere.

The shrinking Soviet trade surplus prompted both higher borrowing and increased gold sales. Net new borrowing increased by several billion dollars, much of it taking place early in the year when the leadership probably decided to finance some imports and build up reserves in the face of uncertain export earnings because of weakening oil prices. In looking to foreign credits, the USSR sought to diversify its sources of money by issuing its first state bonds in the Swiss and West German capital markets. The Soviets also began to negotiate large credit lines with a number of Western banks during the latter half of the year. They concluded a deal with West German banks, but so far they have made little use of this credit line. Estimated Soviet gold sales amounted to approximately $4 billion in 1988, as for the third straight year Moscow turned heavily to the gold market in order to earn hard currency.

The Soviet Union's trade with its Communist partners also suffered in 1988. Moscow registered large trade deficits with most of the countries of Eastern Europe as falling Council for Mutual Economic Assistance (CMEA) energy prices continued to erode Soviet terms of trade with the region. The value of Soviet exports to Eastern Europe declined by almost 5 percent, prompting Moscow to limit the growth of imports from the region to avoid even larger deficits. Trade with Yugoslavia — another large customer for Soviet oil — declined slightly because the Soviets have been unable to boost non-energy exports to offset the falling value of oil exports. Moscow's trade with China rebounded sharply in 1988 following a downturn the previous year, but it is still below planned targets.

Appendix B

Tables on Soviet Economic Performance

Appendix B (Continued)

Table B-1
USSR: Estimated GNP by Sector of Origin at Factor Cost
(billion 1982 rubles)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988[1]
GNP[2]	481.4	561.3	624.0	631.1	648.5	669.3	679.0	684.7	712.3	721.4	731.9
Industry	142.3	187.2	210.9	213.6	216.4	221.8	228.0	232.6	238.9	245.9	251.6
Agriculture[3]	137.6	122.5	123.5	120.5	131.3	139.0	136.1	130.8	144.3	138.5	134.2
Construction	33.6	44.1	49.9	51.2	51.7	53.2	54.3	55.5	57.6	58.9	60.2
Transportation	37.3	51.5	61.1	63.3	64.0	65.8	66.6	68.0	70.1	70.9	72.4
Communications	3.3	4.4	5.6	5.8	6.0	6.2	6.4	6.7	7.1	7.6	8.1
Trade	28.8	36.3	41.5	42.3	42.4	43.6	44.8	45.3	45.5	46.4	47.3
Services	85.2	100.9	115.2	118.0	120.1	122.8	125.7	128.7	131.6	135.8	140.6
Other (including military personnel)	13.4	14.9	16.2	16.3	16.6	16.9	17.1	17.1	17.3	17.4	17.5

1 Preliminary.

2 Components may not add exactly to total because of rounding.

3 Net of feed, seed, waste, and purchases from outside the sector.

Table B-2
USSR: Estimated Value Added in Industry at Factor Cost
(billion 1982 rubles)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988[1]
Industry[2]	142.3	187.2	210.9	213.6	216.4	221.8	228.0	232.6	238.9	245.9	251.6
Metals											
Ferrous	11.0	13.4	14.1	14.1	14.1	14.5	14.6	14.7	15.2	15.4	15.7
Nonferrous	5.7	7.5	8.1	8.1	8.2	8.5	8.7	9.0	9.2	9.4	9.7
Fuel	14.4	18.6	21.7	22.0	22.4	22.6	22.8	22.7	23.5	24.0	24.3
Electric power	8.9	12.5	15.6	15.9	16.3	16.8	17.6	18.1	18.7	19.5	20.0
MBMW	43.2	61.3	71.4	71.7	72.8	74.0	76.7	78.9	81.3	84.3	86.4
Chemicals	9.2	13.7	15.9	16.5	16.8	17.8	18.4	19.1	20.1	20.6	21.0
Wood, pulp, paper	11.5	13.1	12.7	12.9	13.0	13.4	13.7	14.0	14.7	15.0	15.4
Construction	9.3	11.9	12.7	12.9	12.8	13.3	13.5	13.7	14.2	14.7	15.1
Light industry	11.5	13.0	14.7	15.0	14.9	15.1	15.5	15.9	16.1	16.4	16.8
Food industry	12.3	15.1	16.1	16.6	17.1	17.6	18.0	17.7	16.9	17.4	17.9
Other industry	5.4	7.1	7.9	8.1	8.2	8.4	8.6	8.8	9.0	9.3	9.5

1 Preliminary.

2 Components may not add exactly to total because of rounding.

Appendix B (Continued)

Table B-3
USSR: Estimated Average Annual Growth of Per Capita Consumption[1]
(percent change)

	1956-60	1961-65	1966-70	1971-75	1976-80	1981-85	1986	1987	1988
Total consumption	3.9	2.5	5.0	3.0	2.0	0.8	-1.5	1.0	1.5
Food	3.8	1.1	4.2	2.1	1.0	-0.4	-7.7	-0.9	0.9
Soft goods	5.6	2.2	7.2	2.7	2.8	1.3	2.2	0.3	0.0
Durables	10.4	3.9	9.5	9.7	5.4	3.0	10.6	5.4	2.7
Services	3.2	4.4	4.3	3.0	2.1	1.7	1.6	2.7	3.5
Housing	3.0	2.4	2.0	1.6	1.2	1.7	1.7	1.9	2.0
Utilities	4.7	7.8	5.4	5.3	3.8	3.3	3.0	3.1	2.2
Transportation	9.3	8.9	8.2	6.4	2.3	1.7	2.2	1.2	2.7
Communications	5.4	5.7	7.6	5.4	3.8	3.0	4.5	5.7	6.0
Repair and personal care	3.7	5.0	6.4	4.4	4.1	3.1	3.1	6.2	9.5
Recreation	5.3	3.6	2.7	4.1	1.2	1.0	0.2	0.8	0.0
Health	3.4	2.2	3.2	1.6	0.9	0.9	-0.5	2.9	2.0
Education	1.4	5.2	2.9	1.5	1.4	0.9	1.1	1.3	2.0

[1] Based on 1982 established prices.

Table B-4
USSR: Estimated Growth of GNP, Industry, and Labor Productivity[1]
(average annual percent change)

	1966-70	1971-75	1976-80	1981-85	1986	1987	1988[2]
Gross national product[3]	5.0	3.2	2.2	1.9	4.0	1.3	1.5
Labor productivity	2.9	1.4	1.0	1.2	3.7	1.5	2.5
Industry	6.0	5.6	2.4	2.0	2.7	2.9	2.4
Labor productivity	2.8	4.1	1.0	1.4	2.3	3.2	3.1

[1] CIA's procedures for calculating total factor productivity are being revised and, therefore, estimates of total factor productivity are not available at this time.

[2] Preliminary.

[3] Based on indexes of GNP (1982 rubles) by sector of origin at factor cost.

Appendix B (Continued)

Table B-5
USSR: Gross Fixed Capital Investment
(billion 1984 rubles[1])

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987
Total investment	92.2	128.5	150.9	156.5	161.9	171.0	174.3	179.5	194.4	205.4
By Source:										
State	79.4	111.8	133.1	138.5	143.2	150.7	153.7	157.9	172.0	182.6
Collective farms	8.6	12.2	13.3	13.4	13.9	14.8	14.7	15.4	15.5	15.2
Cooperative enterprises and organizations	2.6	2.7	2.9	2.9	3.1	3.5	3.6	3.7	4.1	4.3
Private housing and apartments	1.6	1.8	1.6	1.7	1.7	2.0	2.3	2.5	2.8	3.3
By Sector:										
Industry	32.5	44.9	53.3	55.3	56.8	60.5	62.7	65.5	71.0	75.0
Agriculture	16.0	26.1	29.8	30.5	30.9	32.0	31.0	31.5	33.5	34.4
Transportation and communication	9.0	14.4	18.1	18.8	19.8	21.6	22.3	21.9	22.8	24.0
Construction	3.3	4.8	6.0	5.9	6.4	6.6	5.8	6.4	6.8	6.9
Housing	15.8	19.2	21.1	22.5	24.0	25.8	27.3	28.1	30.9	33.5
Trade and services	15.6	19.1	22.6	23.4	24.0	25.0	25.2	26.4	29.4	31.6

[1] Source: *Narodnoye Khozyaystvo v SSSR*, 1987 and earlier years.

Table B-6
USSR: Total Trade, 1981-88[1]
(billion current US dollars)

	Annual Average 1981-88	1981	1982	1983	1984	1985	1986	1987	1988[2]
USSR: Exports by region									
Total	94.0	79.4	87.2	91.7	91.5	87.2	97.0	107.7	110.7
Communist	56.5	43.4	47.2	51.0	51.9	53.5	65.0	70.0	71.0
Developed countries	24.0	24.4	26.2	26.7	26.4	22.5	18.8	22.7	24.6
Less developed countries	13.5	11.6	13.8	13.9	13.2	11.2	13.2	14.9	15.2
USSR: Imports by region									
Total	85.9	73.2	77.8	80.5	80.3	83.3	88.9	96.0	107.3
Communist	52.6	37.2	42.5	45.5	47.0	51.0	59.4	66.6	71.6
Developed countries	24.5	25.4	26.2	25.4	24.2	23.3	22.7	21.1	27.2
Less developed countries	8.8	10.6	9.1	9.6	9.1	9.0	6.8	7.3	8.5

[1] Includes both hard currency trade and trade conducted with soft currency partners on a clearing account basis.

[2] Preliminary.

Appendix B (Continued)

Table B-7
USSR: Estimated Hard Currency Balance of Payments
(million current US dollars)

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988[1]
Current account balance	-4565	1470	-387	4293	4760	4664	137	1376	5073	1347
Merchandise trade balance	-4804	1814	365	4468	4712	4727	519	2013	6164	2647
Exports f.o.b.	9453	27874	28254	31975	32429	32173	26400	25111	29092	31165
Imports f.o.b.	14257	26060	27889	27507	27717	27446	25881	23098	22928	28581
Net interest	-521	-1234	-1752	-1275	-1052	-1163	-1482	-1737	-2191	-2400
Other invisibles and transfers	760	890	1000	1100	1100	1100	1100	1100	1100	1100
Capital account balance	6981	284	5430	-2965	-1541	-124	1869	1966	-1017	1710
Change in gross debt [2]	6786	-792	1977	-640	116	224	6804	6983	4768	860
Official debt	1492	-280	-1370	967	340	-375	463	563	561	190
Commercial debt	5294	-512	3347	-1607	-224	599	6340	6420	4207	670
Net change in assets held in Western banks [3]	-163	-35	-166	2122	277	-664	1787	1595	-527	20
Estimated exchange rate effect	-22	-411	-1457	-817	-1070	-688	3248	3322	5012	-2570
Net credits to LDCs	715	950	870	2120	3200	2700	1700	4100	4800	5500
Gold Sales	725	1580	2700	1100	750	1000	1800	4000	3500	3800
Net errors and omissions [4]	-2416	-1754	-5043	-1328	-3219	-4540	-2006	-3342	-4057	-3057

1 Preliminary

2 Including additions to short-term debt.

3 A minus sign signifies a decline in the value of assets

4 Includes hard currency assistance to and trade with Communist countries, credits to developed Western countries to finance sales of oil, and other nonspecified hard currency expenditures, as well as errors and omissions in other line items of the accounts.

Appendix B (Continued)

Table B-8
USSR: Estimated Hard Currency Debt to the West
(billion current US dollars)

	1975	1980	1981	1982	1983	1984	1985	1986	1987[1]	1988[1]
Gross debt	12.5	20.5	22.5	21.9	22.0	22.2	29.0	36.0	40.8	41.7
Commercial debt[2]	8.2	11.0	14.4	12.8	12.6	13.1	19.5	25.9	30.1	30.8
Government and government-backed debt[2]	4.3	9.5	8.2	9.0	9.4	9.1	9.5	10.1	10.6	10.8
Assets in Western banks	3.8	10.0	9.8	11.9	12.2	11.5	13.3	14.9	14.4	14.4
Net debt	8.7	10.5	12.7	10.0	9.8	10.7	15.7	21.1	26.4	27.3

[1] Preliminary estimates.

[2] Estimates of government-backed and commercial debt are measured in current dollars and reflect fluctuations in exchange rates. Commercial debt also includes estimates for promissory notes held outside banks.

Table B-9
USSR: Selected Indicators of Agricultural Output

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988[1]
Value of output[2] (billion rubles)	112.5	109.4	113.7	112.5	120.8	128.5	127.7	125.8	136.5	133.1	130.6
Commodity production (million metric tons)											
Grain[3]	186.8	140.1	189.1	158.2	186.8	192.2	172.6	191.7	210.1	211.3	195.0
Potatoes	96.8	88.7	67.0	72.1	78.2	82.9	85.5	73.0	87.2	75.9	62.7
Sugar beets	78.9	66.3	81.0	60.8	71.4	81.8	85.3	82.4	79.3	90.4	87.8
Sunflower seed	6.1	5.0	4.6	4.7	5.3	5.1	4.5	5.3	5.3	6.1	6.2
Cotton[4]	6.9	7.9	9.1	8.4	7.9	8.2	8.1	8.8	8.2	8.1	8.7
Vegetables	21.2	23.4	27.3	27.1	30.0	29.5	31.5	28.1	29.8	29.2	29.3
Meat	12.3	15.0	15.1	15.2	15.4	16.4	17.0	17.1	18.1	18.9	19.3
Milk	83.0	90.8	90.9	88.9	91.0	96.5	97.9	98.6	102.2	103.8	106.4
Wool	.42	.45	.44	.46	.45	.46	.47	.45	.47	.46	.46
Eggs (billion)	40.7	57.4	67.9	70.9	72.4	75.1	76.5	77.3	80.7	82.7	84.6

[1] Preliminary.

[2] Net of feed, seed, and waste, in constant 1982 prices.

[3] Bunker weight. To be comparable to Western measures, an average reduction of 11 percent is required.

[4] 1981, 1983-84 estimated.